April 3, 1973
Preliminary Copy
University of Idaho
Soil Conservation Service

Helmer Silt Loam
68 Ida 0516

General Site Characteristics

Location -- Benewah County, Idaho, 20 feet north and 680 feet east of the southwest corner of section 26, T. 45 N., R. 4 W.; described -- June 17, 1968, by Hal Biggerstaff and Donald Hoxwell ; topography -- rolling dissected foot slopes, simple slope, 12 percent slope; elevation -- 3200 feet; aspect -- northeast; parent material -- ash over loess; drainage -- moderately well; erosion -- none to slight under native vegetation; permeability -- very slow; root distribution -- concentrated on top of A'2 and along cleavage planes; vegetation or use -- Douglas fir, grand fir, Rocky Mountain maple,

classification -- Andic Fragiochrepts, silty, mixed, frigid.

Pedon Description

01 2-1.5 inches. Partly decomposed needles and twigs.

02 1.5-0 inches. Decomposed organic matter.

A2 trace

B21ir 0-2 inches. Reddish yellow (7.5YR 6/6) coarse sandy loam, brown to dark brown (7.5YR 4/2) moist; weak medium to fine platy structure; weakly coherent, very friable, nonsticky, nonplastic; noncalcareous; abundant very fine, fine and medium roots; few very fine discontinuous tubular pores; diffuse irregular boundary.

B22ir 2-15 inches. Reddish yellow (7.5YR 6/6) silt, brown to dark brown (7.5YR 4/2) moist; massive, tending towards weak medium subangular blocky structure; weakly coherent, very friable, nonsticky, nonplastic; noncalcareous; abundant fine and medium roots; common fine tubular pores; abrupt smooth boundary.

A'2 15-21 inches. Very pale brown (10YR 7/4) silt, yellowish brown (10YR 5/4) moist; weak medium to fine prismatic structure; hard, medium firm, slightly sticky, slightly plastic; noncalcareous; plentiful very fine and medium roots; common fine tubular pores; few concretions; bleached specks; hint of clay films; Bir krotovinas; root nap on top of A'2 and roots concentrated in root channels; diffuse smooth boundary.

A' & B' 21-41 inches. Very pale brown (10YR 7/3) silt loam, very pale brown (10YR 7/4) moist; weak medium to fine prismatic structure; hard, firm, slightly sticky, slightly plastic; noncalcareous; plentiful very fine, fine, and medium roots; common fine and medium tubular pores; common concretions larger than 2 mm; trace of Bir; root channels; clear wavy boundary.

B2tx 41-62 inches. Reddish yellow (7.5YR 7/6) silty clay loam, strong brown (7.5YR 5/8) moist; moderate coarse to medium prismatic to moderate medium to fine subangular blocky structure; hard, firm, sticky, plastic; noncalcareous; plentiful fine roots; common fine and medium tubular pores; thin patchy clay films on vertical pore surfaces; many concretions larger than 2 mm; trace of Bir; root channels.

Chemical characterization and physical analysis of profile Emida 68-1 68 Ida 0516

Benewah County SCS No. 68-1

No.	Horizon	Depth in.	pH Paste	pH 1:5	ECx10^3	Saturation extract me/1000 gms soil: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
1	B21ir	0-2"	—	--	----								
2	B22ir	2-15"	6.50	6.44	0.16								
3	$A^1 2$	15-21"	5.90	6.75	0.18								
4	A^1+B^1	21-41"	5.50	6.25	0.40								
5	B_2tx	41-62"	4.95	5.75	0.10								

Extractable ions me/100 gms Ca	Mg	Na	K	H	C.E.C. meq/100	Base Sat.%	Gyp.	$CaCO_3$	E.S.P.	C	O.M. %	N %	C:N	Pw at sat.	Soil:Rx Ratio
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4.69	1.63	0.27	0.87	17.38	17.74					1.486	2.555	0.081	18.39	75.0	
5.00	1.38	0.26	0.46	3.89	9.52					0.296	0.505	0.034	8.65	40.0	
4.25	1.63	0.25	0.24	4.09	9.42					0.263	0.510	0.033	7.99	38.0	
5.50	3.46	0.26	0.27	10.43	17.83					0.294	0.505	0.049	5.99	50.0	

Superscript ^{1} represents "prime" (')

Profile Emida 68 Ida 0516 August 13, 1969

No.	Particle size distribution (mm) (percent) VCS 2-1.0	CS 1-0.5	MS 0.5-0.25	FS 0.25-0.05	VFS 0.1-0.05	TS 2.05	TSi 0.05-0.002	TC <0.002	Gravel & Stone, etc. >2mm	Texture Class
* 0- 2										
2-15	.21	.22	.26	2.10	9.63	12.43	80.62	6.95		Silt
15-21	.05	.14	.30	2.32	5.04	7.85	82.17	9.97		Silt
21-41	.13	.54	.52	1.93	4.68	7.80	79.93	12.27		Silt loam
41-62	.03	.79	.65	1.71	2.48	5.96	63.45	30.59		Silty Clay loam

* Sample missing

	Bulk Density g/cc
0-2	—
2-15	0.92
15-21	1.72
21-41	1.71
41-62	1.71